rRNA Gene Cluster

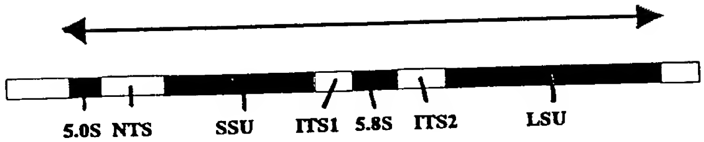


FIG. 1

50
1
AAAGTCGCA[illegible] CTTTCCCCAT AAACCCCCTC CCCACCCC[illegible] TGGACATTGT
100
51
TCCACTTT[illegible] ACTTGTATTG TGAAGCACCC AATGCTA[illegible] CATAGAACAG
150
101
TCCAGTAGTT CAATAGAGAG ACTAGTGAAC ATAGTTTATA ACATTGTCCA
200
151
AGGGGTGGAG GGGGATGCGC GAAATCGATG TGCACGTTTG GTCAAAGATG
250
201
CTCGCGAAAG CTGCACATCA ATTTCGCACA TGGGCGAAAT TGACTTGCAG
300
251
GTGGGTATAA AAGTTGATGT AGGCCATGTG GCTCGATTTC AACCATATGG
350
301
GTATGCTTCT GAGGATGGGG TGTTACAGTG GACCATATGA GGTAGGTCAT
400
351
TTGGAGATGT CACCAAAATG GTCTAAATCT GCGCATTCCA TTTAAGTGAA
450
401
TTTAAGTGAA ATTTAAGTGA ATTTTACTTA AAATTGACCT TTTTCGTTGC
500
451
GCAGATTTGG GGTGGTGATG GGTGACGCGG CGAATTTTTT AAAAAAGAGG
550
500
TATATCGCGT GCTATTTGTA TTTTTGGTAT CACCGCGTCA CCAATCACCA
600
551
TTGACGGTTT CTTTTTCGAA GTTTTTCCGG ATTATTGCAT TTTTTATATA
650
600
ATTGTGGGTG GCTGATTCTT GCGAAAGGAC TGTTGTGATG TCCGAGTTCC
700
651
CAAATTGGGA GTTTTTGGAC ATCACTCCTG ATCTGCCGGC GGCGATCAGG
750
700
ATGACTGACA TTTCGATATA TTTTGGGTAT TCGATAGCTG CCAAATCGGT
800
751
CAGCGTCGAG TATTCCGGTT TATTCGAAGG ATTCATGATA TTGCAAAATA
850
800
TCATTGATTT TCATGGGGTT TTGTATTAGT ACCCGCTCAT TGTGGGAAAG
900
851
TCGGGTGGAT TTATCTTACC CGCAAATCTA ATACAAGATT TGCATGATGC
950
900
AGCAATAGAC CAAGGTTAGT ATAGCAGTTG TATTTATACG ACTAGTTATG
1000
951
CAAACCCTTT GTGTTTTTTG TTGCGACTCT TGGCGTGAAC CGGAAGACCG
1050
1000
GACCTCGCTT TCGACTATTC ATCTTTGATG GATATGAGAT CGCAAGGGTA
1100
1051
TCGCTTCGTG CGATATTTAG TGACCATCAG AGCACGCTAC GACTTTTGAT
1150
1100
TATATCCTTG GATTTAATCG GAAGCTCGCA AGCATTGCAT TGATGCAATC

FIG. 2

ttttcaTTTT T[illegible]TTCACA ACCCCGCACC CCATGTACAA [illegible]TGCCAAC
#1
CACTAGAGTT TCAACAACAT TCGGATTTGA CAACATGTCA ACAATTCACA
#51
ACAGAAATTG ACAACATTGT CACAAATTCT CAAATTGGAC AACATTGGAC
#101
AAAAATTCAC AACATACATT GGACAACAGT GGACAACGAA CCCAAACCCG
#151
ACAACATTGT CCAGGGGGAT AGGGGGTGAA AAAGCAGTGC CGGCAAAGTC
#201
GAAAGATGTC AAGTTGGAAT GCGGCTCAAA TTCGTCATTT GTGTAAATCC
#251
GCAATTTTGC CAATGTGCAA TTTTGCAAAT GTGCAATTTT GCAAATGTGC
#301
AATTTTGCCA ATGTGCAATT TTGCAAATGC GCAATTTTGC AAATCCGCAA
#351
TTTTGCAAAT GTGCAATTTT GGAAAATCAC CAAATGAAAA TCGTCCAAGT
#401
CGAATTGGAG GCGTGGTGAC ATGGTCCCGG GATCCCCTGG TTACAGTGGA
#451
CAATATCCCA GCAATATTCG CTGTAATTTG GAGTTTCGCT GTTTTGGCAA
#501
ATTTTGAGTC TGAAAAAAAA AATTGCAAAT GCGCAAAGGG GGTGAAGGAA
#551
AAAAAAGCAC CCCCGAAGGT AAAATTCCCT TTAAGTCCCT TGCGCATTTG
#601
CAAAATTTTC AAAAATTGTT GCAAATGCGC TTTTGTTATT TGGCCGGTTC
#651
ATTGGTGTCA AAAGTTGCCT GGGGTGGTTA CACAATGCAC GGAATTGGTT
#701
GGAAGTTGTG TGATTGAAAA TTGGTCGTGT CACACAATTT TGCGCATTTG
#751
CAAAAATTCG CAAATTGGAC AAAAAAGGGT CGCGCACAGT CAAATTGCGC
#801
AAATTTCACT TTGAAGTGAG TGCGCATTTG TGGGGCAGAA ATGTGGTGAC
#851
AGCATCGTTT TTTATAATAA ATATTCTATA TTTAGTATCT TTATTATAAT
#901
TTGCTGTCAC CAATCACCAT TTTAGAATTT TTATTTTTTT ATGTTTTAGT
#951
GACCGCGGGA TTTTTTGCAA AGTACTATYG TGATGTTTGA GTTGTTTGAA
#1001
ATGGGCAATT TAGAACATCA TCAGAAATCG CTGAATAGTG ATTTTTGAGT
#1051
TTGACTGTTT GAAGTGTTTT GGGTATTCGG CAGCTGCCAA ATCGGTCAGC
#1101
GTCGAATATA ATAGCATTTT TGTGTGTATA TGATATTTAG CGATATCATT
#1151
GGAATCATGG GGTTTTGTAT TAGTACCCGC TCATTGTGGG AATGTCGGGT
#1201
GGTTCAATAT CACCTGCAAA TTTAATACAG GATTTGCATG ATGCAGCGAC
#1251
TGACCGGGGT TGGTATAATA GCTGATTATT CGGCTTATTA TGCAGACCTA
#1301
TCGTGTTAGT AGTTGCGACT CTTGGCGTGA ACCGGAAGAC CGGAACTTGA
#1351
ATTCGACTAT TTACGTCCGT AAACAGGAGA TTTCAAGAAT ATTGCACATT
#1401
TTGCGTGATA TAAACGTGAT CATCTGAGCA CGCTTCGACT CTTGGATATC
#1451
TGCTAATCAG CCGTCATCTG AGAGCTCGCA AGCATTGCAA TTGATGCAAT
#1501

FIG. 3

50
1
CGTGCCCTTT TCACGAATTC ACAGCCCCGC ACCCCATGTA CAATGTTGCC
100
51
CACCCGA[illegible] GCCTGCCTGC CCACCCGAAA TGCCCGA[illegible] GCCCGTTAGA
150
101
AAAAGTATGC GAAAAGTTCT TGTCAATTTT GACAGTGTGT GAAAAAACTG
200
151
AAAAAGTCCA CTCAACATTG CATTATGCAA TTTGCCACTC AACATTGTCC
250
201
AGGGGGATAG GGGGTGAAAA AGTATCGCAG TCCAACTGAA AAGATGCTAA
300
251
GTTGAAATGC GGCGCAAATT CATCACTTGA GTTGCGAAAA TCCCTAAAGT
350
301
CGAATTTGGC ACTCGGTGAC ATGATCGGGA ATTTCCCTGG TTACAGTGGT
400
351
CAAATCCCAG CAATTTTGGC AAAGTTTTTG AGTTTCGCAC TTTTCGCAAA
450
401
TTTCGTGTCT GAAAAAAAAA TTTCAACTTT GCGCAAAGGG GTCAAAGGGA
500
451
AAAAAAGCAC CCTCAAAAGG AAATTTCCCT TTAATCCCCT TTGAAAAAAA
550
500
TGCGCAAAGT TAAATTTGCG AAAATTTCGA TTTTCTCATA TGACCGATTA
600
551
GTTGGTGCCA GATGGTAGTC GGGATGGTTA CACGGTGCAC GGAACTCGTT
650
600
GGAAGTTCTG GAGTTACGAA TTGGTCCCGT CACCACAATT TGCGCATTTT
700
651
TGAAATTGCG CAAATTTGCG AAAAAAGCAG CGCGCAAAGT TAAATTGTGC
750
700
GAAAATTGAC TTTCAGGTCG GTGCGCAAAT TTGGGGTGAA AAAGTGGTGA
800
751
CAGCATCAGA ATTATAATAA ATAATCTATA ATCTAGTTCT TTTATTATAA
850
800
TTAGCTGTCA CCAATCACCA TTTGAGATTT TTTATTTTTT TATGTTTTAG
900
851
TGACCGCGGT ATTTTTTCCA GAGTACTATC GTGATGTCTG AGTTGTCTAA
950
900
AACGGCAATT TCAGAACATT ACCAGAAAAC ACTGAATAGT GGTTTCTGAG
1000
951
TCTGACTGTT TGAAGTGTTT TGGGTATTCG GCAGCTGCCA ATTCGGTCAG
1050
1000
GGTTGAATAT ACTAACATTT CTGTGTGTAT ATGGTATTTA GCGATATCAT
1100
1051
TGGAATCATG GGGTTTTGTA TTAGTACCCG CTCATTGTGG GAAAGTCGGG
1150
1100
TGGTTCAATA TCACCTGCAA ATTTAATACA GGATTTGCAT GATGCAGCGA
1200
1151
CTGACCGGGG TTAGTATAAT AGCTGATTAT TCGGCTTATT ATGCAGACCT
1250
1200
ATCGTGTTAG TAGTTGCGAC TCTTGGCGTG AACCGGAAGA CCGGAACTTG
1300
1251
ATTTCGACTA TTTACGTCCG TAACACGTCC GTAAACAGGA GATTTCAAGA
1350
1300
ATATTGCACA TTTTGTGTGA TATAATCGTG ATCATCTGAG CACGCTTCGA
1400
1351
CTCTTGAATA TTTGTTAAAC AACCGATATT CGGGAGCTCG CAAGCATTGC
1450
1400
AATTGATGCA ATC

FIG. 4

Primer	Sequence	Target
300 F	5'-CACTTGTATTGTGAAGCACCC-3'	
300 R	5'-TTG GTG ACA TCT CCA AAT GAC-3'	*Perkinsus marinus*
500 F	5'-ATGCTAGCCCATAGAACAGT-3'	
500 R	5'-ATGCTAGCCCACATCACAGC-3'	
NTS7	5'-AAGTCGAATTGGAGGCGTGGTGAC-3'	
NTS6	5'-ATTGTGTAACCACCCCAGGC-3'	*Perkinsus* andrewsi
PM5	5'-ATGCTAGCCC ATAGAACAGT-3'	*P. marinus* type I
PM7	5'-CAT CTC CAA ATG ACC TAC CT-3'	*P. marinus* type I
PM6	5'-ATGCTAGCCC ACATCACAGC-3'	*P. marinus* type II
PM8	5"-CAT CTC CAA ATG ACC TAC CA-3'	*P. marinus* type II

FIG. 5

FIG. 6

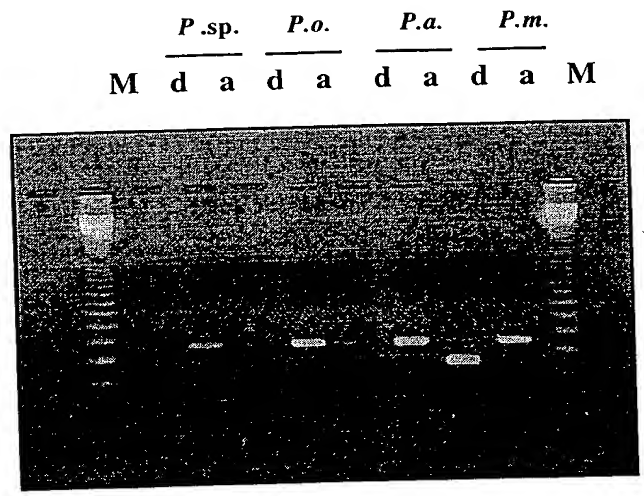


FIG. 7

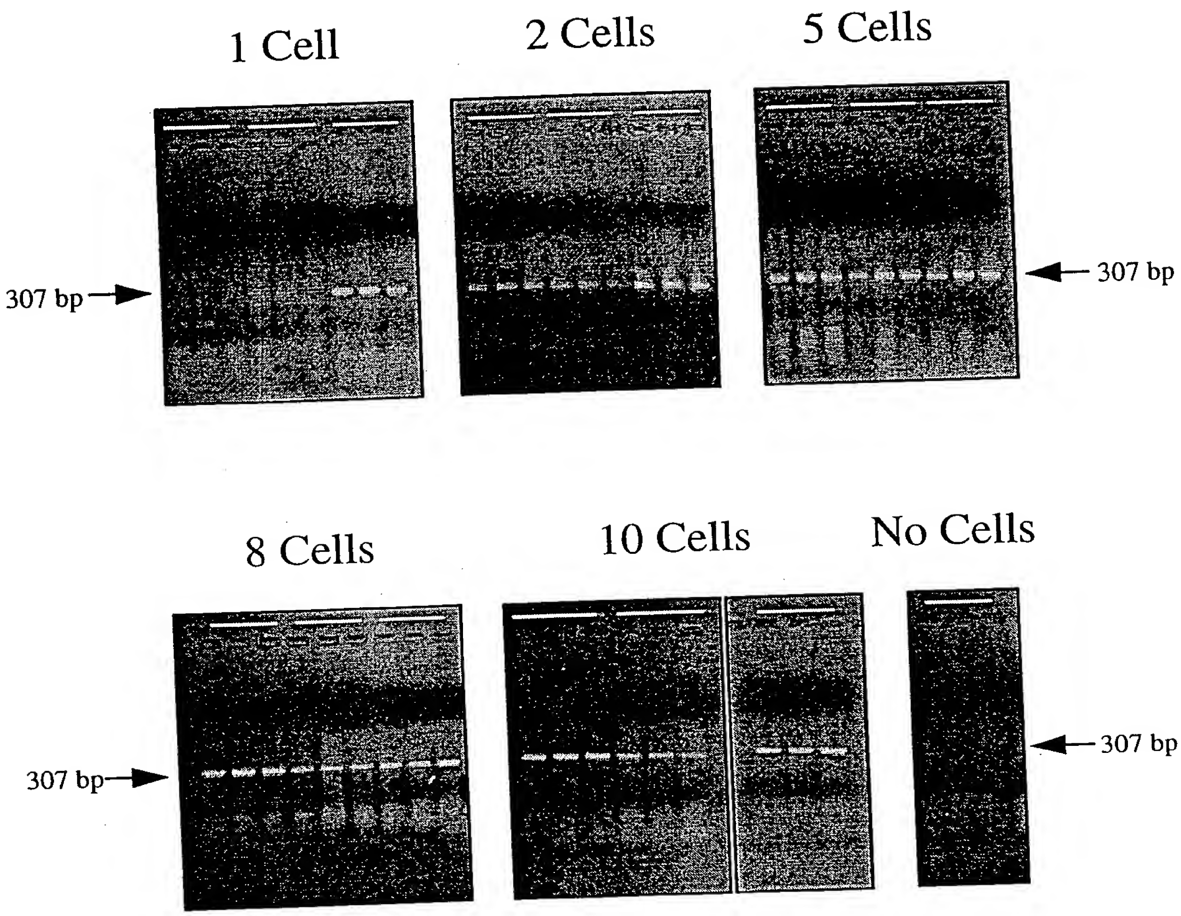

1 Cell
2 Cells
5 Cells
307 bp
307 bp
8 Cells
10 Cells
No Cells
307 bp
307 bp

FIG. 8

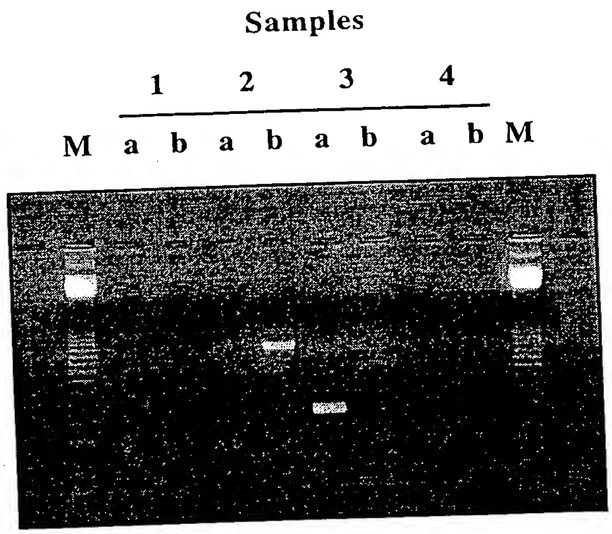


FIG. 9

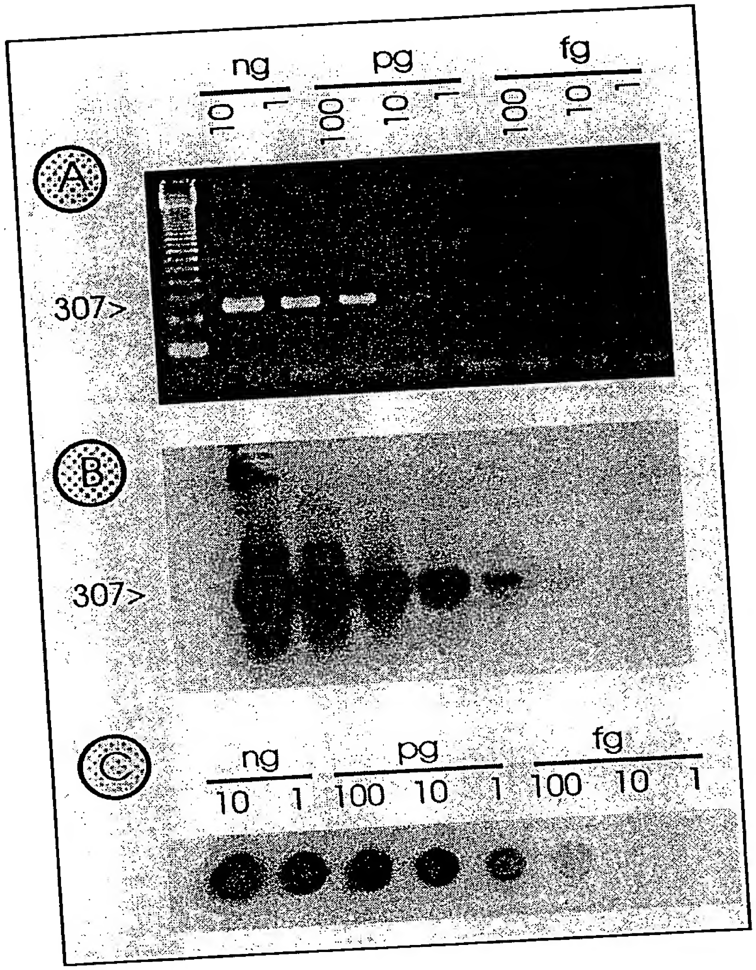

ng
pg
fg
10
1
100
10
1
100
10
1
A
307>
B
307>
C
ng
pg
fg
10
1
100
10
1
100
10
1

FIG. 10

	1				50
Type-I	CACTTGTATT	GTGAAGCACC	CAATGCTAGC	CCA**TAGA**ACA	**GT**CCAGTAGT
Type-II	CACTTGTATT	GTGAAGCACC	CAATGCTAGC	CCA**CATC**ACA	**GC**CCAGTAGT
	51				100
Type-I	TCAATAGAGA	GAC**T**AGTGAA	CATAGTTTAT	AACATTGTCC	AAGGGGTGGA
Type-II	TCAATAGAGA	GAC**G**AGTGAA	CATAGTTTAT	AACATTGTCC	AAGGGGTGGA
	101				150
Type-I	GGGGGATGCG	CGAAATCGAT	GTGCACGTTT	GGTCAAAGAT	GCTCGCGAAA
Type-II	GGGGGATGCG	CGAAATCGAT	GTGCACGTTT	GGTCAAAGAT	GCTCGCGAAA
	151				200
Type-I	GCTGCACATC	AATTTCGCAC	ATGGGCGAAA	TTGACTTGCA	GGTGGGTATA
Type-II	GCTGCACATC	AATTTCGCAC	ATGGGCGAAA	TTGACTTGCA	GGTGGGTATA
	201				250
Type-I	AAAGTTGATG	TAGGCCATGT	GGCTCGATTT	CAACCATATG	GGTATGCTTC
Type-II	AAAGTTGATG	TAGGCCATGT	GGCTCGATTT	CAACCATATG	GGTATGCTTC
	251				300
Type-I	TGAGGATGGG	GTGTTACAGT	GGACCATATG	**A**GGTAGGTCA	TTTGGAGATG
Type-II	TGAGGATGGG	GTGTTACAGT	GGACCATATG	**T**GGTAGGTCA	TTTGGAGATG
	301				
Type-I	TCACCAA				
Type-II	TCACCAA				

FIG. 11

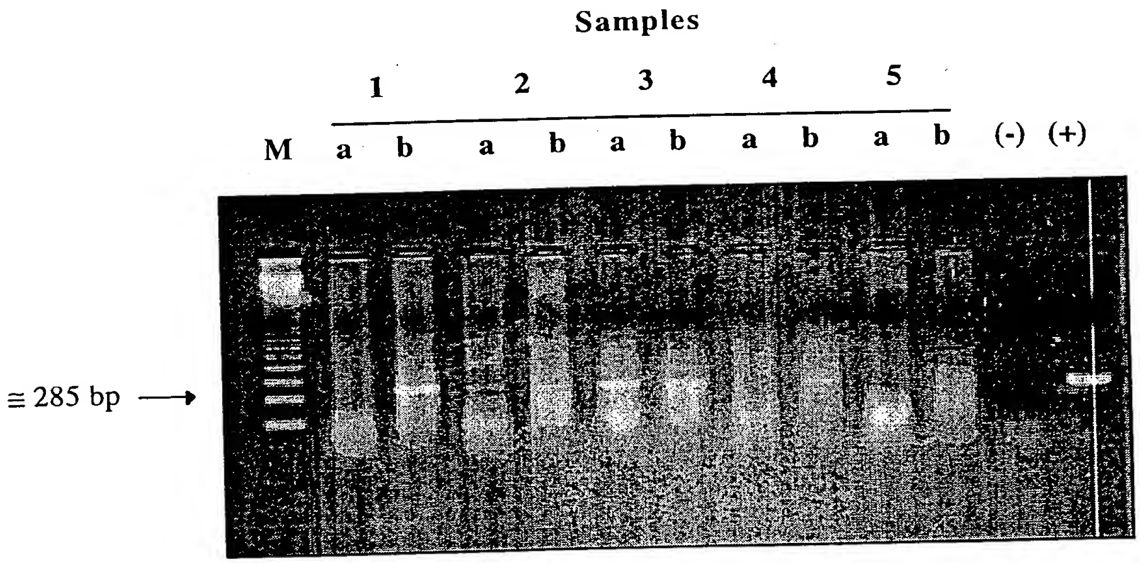

Samples
1
2
3
4
5
M
a
b
a
b
a
b
a
b
a
b
(-)
(+)
≅ 285 bp

FIG. 12

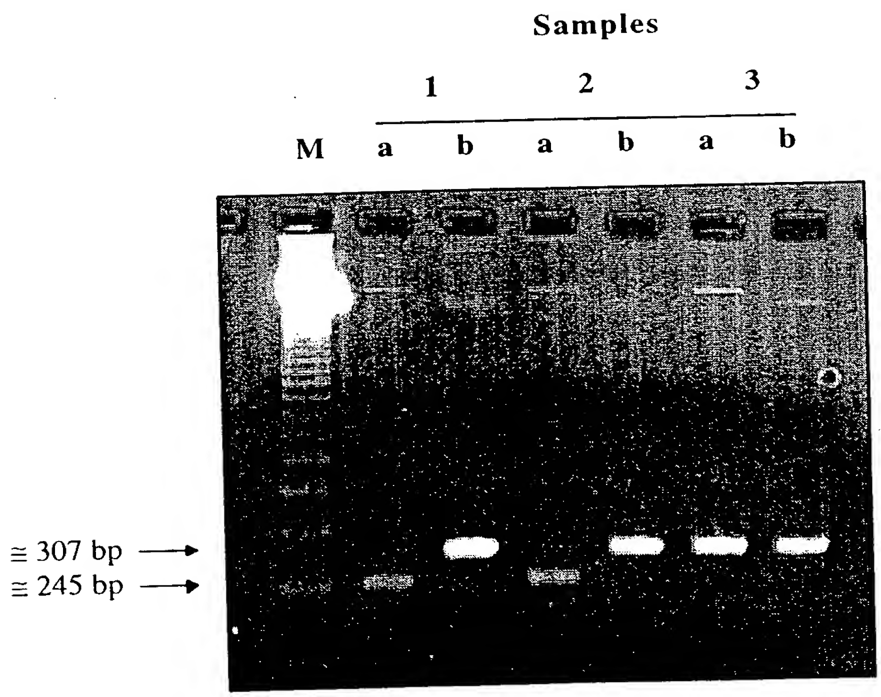
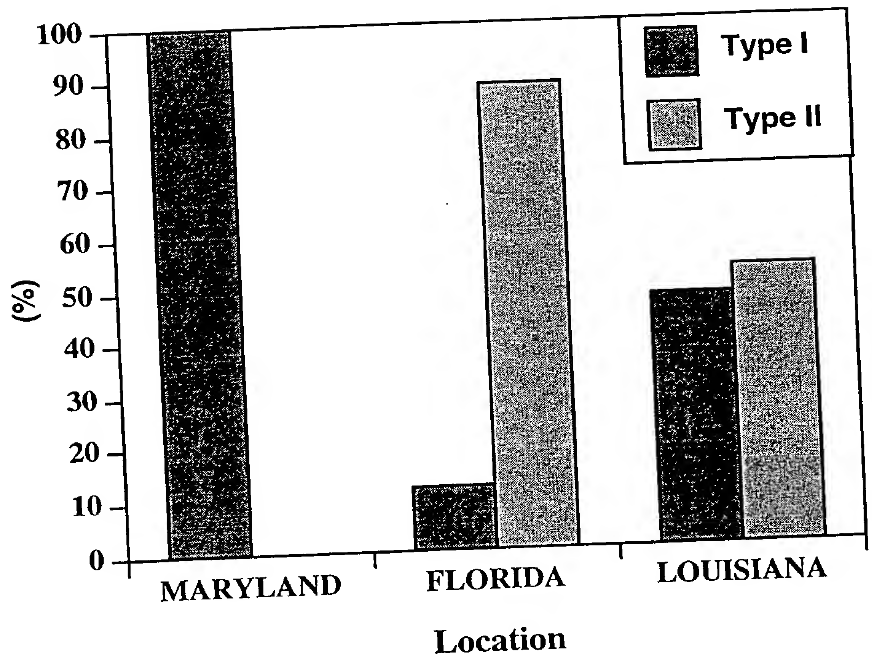

Samples
1
2
3
M
a
b
a
b
a
b
≅ 307 bp
≅ 245 bp

FIG. 13



100
90
80
70
60
50
40
30
20
10
0
(%)
Type I
Type II
MARYLAND
FLORIDA
LOUISIANA
Location

FIG. 14

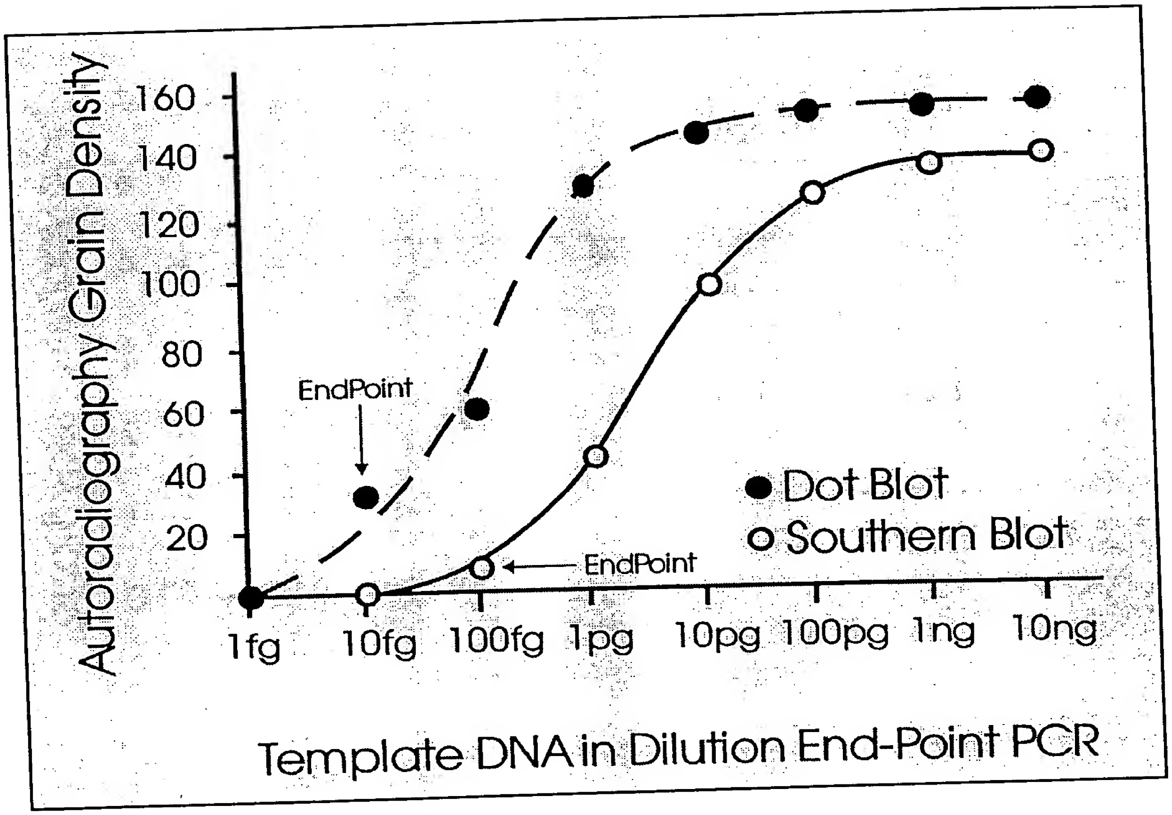
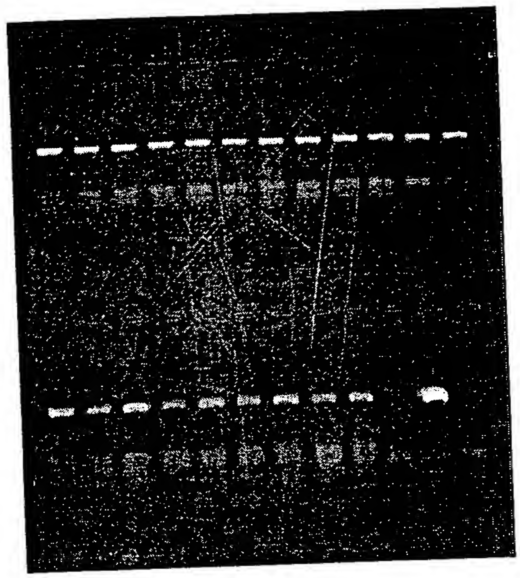

Autoradiography Grain Density
160
140
120
100
80
60
40
20
EndPoint
EndPoint
Dot Blot
Southern Blot
1fg
10fg
100fg
1pg
10pg
100pg
1ng
10ng
Template DNA in Dilution End-Point PCR

FIG. 15

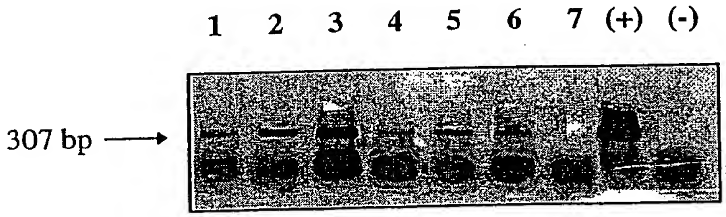
Samples

1 2 3 4 5 6 7 8 9 10 11 12



13 14 15 16 17 18 19 20 1 - + -

FIG. 16



```
                 .TCTTTTT[illegible] TCGCACTCAT GGCTTGTGCA TGCGTGCAA[illegible]CCCCCGGAGC
#1               ..................................................

>P. atlanticus.CCCCTGGACA ATGTTATCCC AGCTCAACAA CGAGCAACAG TGCTATGGCA
#51            ..................................................

>P. atlanticus.AGTAGTCCAC TAGAGAGCCA AGTCGACAAT CTCTACAACA TTGTCCAAGG
#101           ..................................................

>P. atlanticus.GGGAAAGGGG GGCGCGCGAA GTTGACCTGC AGCAGAGGGA AAAGATGCTG
#151           ..................................................

>P. atlanticus.AGTTTTGCTG CACCCCAACT TTGCGCACTT GGCGAAGTTG ACTTGCAGGC
#201           ..................................................

>P. atlanticus.GAGGGTAAAA GATGCTATGG TTGGTTGCGG ACCAAGTTCG CCGTGTGGGT
>PA690F-Text               ATGCTATGG TTGGTTGCGG ACC
#251           ..................................................

>P. atlanticus.CATCATTATC GAGGTCTGTG GTGACGATGG ACTAGTTTTT AGGGATTTTC
#301           ..................................................

>P. atlanticus.CGGAGGTGTC ACCACGGACC CCCCAACTTT GCGCACGGGG GGTACTCAAT
#351           ..................................................

>P. atlanticus.TTTAAGTGAA ATTTAAGTAA AATTTACTTA AAATTCACGT TTTTGGGTGC
#401           ..................................................

>P. atlanticus.GCAAAGTTGA GGTGGTGACT GGTGACACGA AAATTTTAAA AAAGAGAGAT
#451           ..................................................

>P. atlanticus.ATTAAAAAAA TATTTATATT TTCTGTGTCA CCGTGTCACC AGTCACCACA
#501           ..................................................

>P. atlanticus.GGGCGTAATT TTCCGGGAAA TTTTCAGATT TTCCGGAAAA ATTGCATTTT
#551           ..................................................

>P. atlanticus.GGGGTAAATA GTGTCCGTCA GAATTTTGCC AAAGGACTGT CGTGATGTCC
#601           ..................................................

>P. atlanticus.GAGTTCCCAA ATTGAGGGTT TTTGGACATC GCTCTGAAAT CGCTAACGGC
#651           ..................................................

>P. atlanticus.GTTTCAGATT TCCGACTTTT CGACATATTC TGGGTATTTG ATAGCTGCCA
#701           ..................................................

>P. atlanticus.AATCGGTCAG CGTCGAATAT TCCAATATTT CGAAGGATAT ATGATATCGC
#751           ..................................................

>P. atlanticus.GAGATATCAT TGGATTTCAT GGGGTTTTGT ATTAGTACCC GCTCATTGTG
                                                 TAGTACCC GCTCATTGTG
>PER1-Text
#801           ..................................................

>P. atlanticus.GGAAAGTCGG GTGAATTTAT TCAACCCGCA AATCTAATAC AAGATTTGCA
>PER1-Text     G
#851           ..................................................

>P. atlanticus.TGATGCAGCG ACTGACCGGG GTGAGTGTAG CAGCTGTTCT ACGGCTTGCT
                                                  GCTGTTCT ACGGCTTGCT
<PA690R-Text
#901           ..................................................

>P. atlanticus.ACGCAGACCT ATCGTGTTAG TAGTTGCGAC TCTTGGCGTG AACCGGAAGA
<PA690R-Text   AC
#951           ..................................................

>P. atlanticus.CCGGACCTCG CTTTCGACTA TTCATTCCGA TGAATATGAG ATTGCAAGGG
#1001          ..................................................

>P. atlanticus.TATCGCTTCG TGCGATATTT AGTGATCATC AGAGCACGCT ACGACTTCAG
#1051          ..................................................

>P. atlanticus.TATATCCTCG GATACACAGA AGCTCGCAAG CATTGCATGA TGCAATC
                                     AGCTCGCAAG CATTGCA
<PER2-Text
#1101          ..................................................
```

FIG. 17

```
>P. andrewsi-S.ACC[illegible]TTGA TCCTGCCAGT AGTCATATGC TTG[illegible]TCAAA GATTAAGCCA
#1             ..................................................

>P. andrewsi-S.TGCATGTCTA AGTATAAGCT TTAAACGGCG AAACTGCGAA TGGCTCATTA
#51            ..................................................

>P. andrewsi-S.AAACAGTTAT AGTTTATTTG GTGATCGATT ACTATTTGGA TAACCGTAGT
#101           ..................................................

>P. andrewsi-S.AATTCTAGAG CTAATACATG CGTCAAGGCC CGACTTCGGA AGGGCTGCGT
#151           ..................................................

>P. andrewsi-S.TTATTAGATA CAGAACCAAC CTAGCTCCGC CTAGTCCTTG TTGGTGATTC
#201           ..................................................

>P. andrewsi-S.ATAATAACCC GGCGAATCGC ACGGCTTGTC CGGCGATGGA CCATTCAAGT
#251           ..................................................

>P. andrewsi-S.TTCTGACCTA TCAGCTATGG ACGGTAGGGT ATTGGCCTAC CGTGGCGTTG
#301           ..................................................

>P. andrewsi-S.ACGGGTAACG GGGAATTAGG GTTCGATTCC GGAGAGGGAG CCTGAGAAAC
#351           ..................................................

>P. andrewsi-S.GACTACCACA TCTAAGGAAG GCAACAGGCG CGCAAATTAC CCAATCCTGA
#401           ..................................................

>P. andrewsi-S.TACAGGGAGG TAGTGACAAG AAATAACAAT ACAGGGCAAT TCTGTCTTGT
#451           ..................................................

>P. andrewsi-S.AATTGGAATG AGTAGATTTT AAATCTCTTT ACGAGTATCA ATTGGAGGGC
#501           ..................................................

>P. andrewsi-S.AAGTCTGGTG CCAGCAGCCG CGGTAATTCC AGCTCCAATA GCGTATATTA
#551           ..................................................

>P. andrewsi-S.AAGTTGTTGC GGTTAAAAAG CTCGTAGTTG GATTTCTGCC TTGGGCGACC
                                         AGTTG GATTTCTGCC TTGGGCG
>SSU3F-Text
#601           ..................................................

>P. andrewsi-S.GGTCCACCTT TCCTACGGGT TAGGTTGGTA CCAGGTTTGA CCTTGGCTTT
#651           ..................................................

>P. andrewsi-S.TTCTTGGGAT TCGTGCTCAC GCACTTAACT GTGCGCTGAC CGTGTTCCAA
#701           ..................................................

>P. andrewsi-S.GACTTTTACT TTGAGGAAAT TAGAGTGTTT CAAGCAGGCT TATGCCGTGA
#751           ..................................................

>P. andrewsi-S.ATACATTAGC ATGGAATAAT AGGATATGAC TTTGGTCATA TTTTGTTGGT
#801           ..................................................

>P. andrewsi-S.TTCTAGGACT GAAGTAATGA TTAATAGGGA CAGTCGGGGG CATTCGTATT
#851           ..................................................

>P. andrewsi-S.TAACTGTCAG AGGTGAAATT CTTGGATTTG TTAAAGACGA ACTACTGCGA
#901           ..................................................
```

FIG.18A

```
>P. andrewsi-S.AAGCATTTGC CAAGGATGTT TTCATTGATC AAGAACGAAA GTTAGGGGAT
 #951           ..................................................
>P. andrewsi-S.CGAAGACGAT CAGATACCGT CCTAGTCTTA ACCATAAACT ATGCCGACTA
 #1001          ..................................................
>P. andrewsi-S.GGGATTGGGA GTCGTTAATT TTAGACGCTC TCAGCACCTC GTGAGAAATC
 #1051          ..................................................
>P. andrewsi-S.AAAGTCTTTG GGTTCCGGGG GGAGTATGGT CGCAAGGCTG AAACTTAAAG
 #1101          ..................................................
>P. andrewsi-S.GAATTGACGG AAGGGCACCA CCAGGAGTGG AGCCTGCGGC TTAATTTGAT
 #1151          ..................................................
>P. andrewsi-S.TCAACACGGG AAAACTCACC AGGTCCAGAC ATAGGAAGGA TTGACAGATT
>SSU4F-Text                       ACC AGGTCCAGAC ATAGGAAGG
 #1201          ..................................................
>P. andrewsi-S.GATAGCTCTT TCTTGATTCT ATGGGTGGTG GTGCATGGCC GTTCTTAGTT
 #1251          ..................................................
>P. andrewsi-S.GGTGGAGTGA TTTGTCTGGT TAATTCCGTT AACGAACGAG ACCTTAACCT
 #1301          ..................................................
>P. andrewsi-S.GCTAAATAGT TGCGTGAAAT CTTGTATTTC ACCGCTACTT CTTAGAGGGA
 #1351          ..................................................
>P. andrewsi-S.CTTTGTGTGT TTAACACAAG GAAGCTTGAG GCAATAACAG GTCTGTGATG
 #1401          ..................................................
>P. andrewsi-S.CCCTTAGATG TTCTGGGCTG CACGCGCGCT ACACTGACAC GATCAACGAG
 #1451          ..................................................
>P. andrewsi-S.TATTTCCTTG CCCGGTAGGG TTAGGGTAAT CTTTTGAAAT CGTGTCGTGC
 #1501          ..................................................
>P. andrewsi-S.TAGGGATAGA CGATTGCAAT TATTCGTCTT CAACGAGGAA TTCCTAGTAA
 #1551          ..................................................
>P. andrewsi-S.ATGCAAGTCA TCAGCTTGCG TTGATTACGT CCCTGCCCTT TGTACACACC
 #1601          ..................................................
>P. andrewsi-S.GCCCGTCGCT CCTACCGATT GAGTGATCCG GTGAGCTGTC CGGACTGCGA
 #1651          ..................................................
>P. andrewsi-S.TTAGTTCAGT TTCTGTTCTT TTCGCGGGAA GTTCTGCAAA CCTTATCACT
 #1701          ..................................................
>P. andrewsi-S.TAGAGGAAGG AGAAGTCGTA ACAAGGTTTC CGTAGGTGAA CCTGCAGAAG
 #1751
    .........................
>P. andrewsi-S.GATCATTC
```

FIG. 18B

ACACCGATTC ATTCTCTGAG AAACCAGCGG TCTCTGTAAA AGGAGATGGG
#1
ATCTCCGCTT TGTTTAGATC CCCACACCTG ACCGCTTTAA CGGGCCGGGT
#51
AGGTGCATAA CTTCTATGAA CCAATTGTAC TAGTCTAAAG TATCCAATAT
#101
CCTTTTGGAT TTTGGTATTT CAAAACGAAA TTCCAAACTC TCAACGATGG
#151
ATGCCTCGGC TCGAGAATCG ATGAAGGACG CAGCGAAGTG CGATAAGCAC
#201
TGCGATTTGC AGAATTCCGT GAACCAGTAG AAATCTCAAC GCATACTGCA
#251
CAAAGGGGAT TTATCCTCTT TGTACATACA TATCAGTGTC GCTCTTCTTC
#301
CCGATACAAA CATTTTGTTG ATTTACAATC AACATTATGC TTTGTATCCC
#351
GCTTGGATTC CTTTATTGGG ATCCGCTGTG TGCGCTTGCT GACACAGGCG
#401
CATTAATTTG CAAGGCTATA ATACTACTGT ACTGTAGCCC CTTCGCAAGA
#451
AGGACTGCGC TAGTGAGTAT CTTTGGATGC TCGCGAACTC GACTGTGTTG
#501
TGGTTGATTC CGTGTTCCTC GATCACGCGA TTCATCGCTT CAACGCATTA
#551
TGTCAAATTT GATGAATGCA GAGAGTTGTT TATGAATTAC GCGATCGCTT
#601
TGGTCTCAGA ATCGTTACTA TAGCACGCTT GTCGGTTTGC AACCTGGCAA
#651
TATGTCATCA TT
#701

FIG. 19

		Primers to claim							
Perkinsus species	PCR	Name	Forward Primer (5'-3')	Position[1]	Name	Reverse Primer (5'-3')	Position[1]	Amplicon Size (bp)	Publication
Perkinsus marinus	Species specific	300F	CAC TTG TAT TGT GAA GCA CCC	60-80	300R	TTG GTG ACA TCT CCA AAT GAC	346-366	307	Marsh et al. J. Parasitol. 1995 81(4):577-83. J. Parasitol. 1999 85(4):650-6.
Perkinsus atlanticus	Species specific	PA690F	ATG CTA TGG TTG GTT GCG GAC C	262-283	PA690R	GTA GCA AGC CGT AGA ACA GC	933-952	691	Robledo et al. J. Parasitol. 2000 86(5):972-8
Perkinsus andrewsi[2]	Species specific	NTS7	AAG TCG AAT TGG AGG CGT GGT GAC	447-470	NTS6	ATT GTG TAA CCA CCC CAG GC	717-736	290	Coss et al. J. Euk. Microbiol. (In Press)
Perkinsus marinus	Generic	PER1	TAG TAC CCG CTC AT(TC) GTG G	827-845	PER2	TGC AAT GCT TGC GAG CT	1123-1139	313	Coss et al. J. Parasitol. (Submitted)
Perkinsus atlanticus	Generic	PER1	TAG TAC CCG CTC ATT GTG G	833-851	PER2	TGC AAT GCT TGC GAG CT	1121-1137	305	Coss et al. J. Parasitol. (Submitted)
Perkinsus andrewsi	Generic	PER1	TAG TAC CCG CTC ATT GTG G	1221-1239	PER2	TGC AAT GCT TGC GAG CT	1523-1539	319	Coss et al. J. Parasitol. (Submitted)

[1]Relative to the NTS sequence

[2]*Perkinsus* sp. (*Macoma balthica*)

FIG. 20

		Primers to claim						
Perkinsus species	PCR	Name	Forward Primer (5'-3')	Position	Name	Forward Primer (5'-3')	Position[1]	Publication
Perkinsus andrewsi	Sequencing	SSU3F	AGT TGG ATT TCT GCC TTG GGC G	626-647	SSU4F	ACC AGG TCC AGA CAT AGG AAG G	1218-1239	Coss et al. J. Euk. Microbiol. (In Press)

FIG. 21